

ANNUAL QUOTA REPORT
for the
COMMERCIAL HARVEST OF
BRUSHTAIL POSSUM

Trichosurus vulpecula
in
Tasmania

1 July 2015 to 30 June 2016

Wildlife Management Branch

June 2015

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1.

1. Introduction

The commercial harvest and export of brushtail possum products in Tasmania is managed by a Commonwealth-approved trade management plan. June 30th 2015 marks the end of the first iteration of this plan (2010-2015); the new version of this management plan, covering the period 1 July 2015 to 30 June 2020 is currently being assessed for approval by the Commonwealth Department of the Environment. This transition provides a complication for the normal process for determining and approving quotas as the old plan will not apply for the next quota year and the new plan has not yet been approved.

Changes to the method of determining the quota and the reporting requirements (including the format of quota reports) included in the new plan have been informally approved by DOE therefore for the purposes of this quota report, it will be assumed that the new plan will be approved in its submitted form and quota calculation will occur in the manner described in the new plan.

Section 7.4.1 of the *Management Plan for the Commercial Harvest and Export of Brushtail Possums in Tasmania- 2015-2020* (referred to as 'the plan') requires an annual quota to be determined for the maximum number of brushtail possums (*Trichosurus vulpecula*) that may be commercially harvested from each management region in Tasmania during the quota year. The quota year extends from 1 July to 30 June of the following year.

The quota for each management region is based on the trigger point density indices specified in section 7.4.1 of the plan and determined by the results of annual population monitoring. The trigger points and corresponding commercial harvest quotas determined for the quota period are described in Section 2 of this document. Quotas and management responses provide a safeguard against over-harvesting of the population and are set at levels unlikely to lead to a long-term decline of the species that would threaten its survival in each region of Tasmania. Appropriate management controls will be implemented in response to any change in brushtail possum numbers identified by annual population monitoring.

The non-commercial take of brushtail possums, including that from 1080 poisoning, is not considered a management control under the plan. However, as the non-commercial take has typically accounted for between 95-99% of the total brushtail possum take in Tasmania, it is taken into account when determining commercial quotas.

Information critical to determining the annual quota for each region in Tasmania is provided in this report and includes the following:

- The results of population monitoring
- The density estimates for the year
- The size of the allocated commercial quota for brushtail possums, set in accordance with section 7.4 of the plan;

2 Commercial Quotas: Trigger Points and Management Responses

Trigger point density indices for the brushtail possum in Tasmania have been determined in the plan. Trigger points for initiating management changes in each region are given in Tables 1(a)-1(d). The commercial quotas are based on the estimated minimum total take (crop protection and commercial) and mean 3-year exponentially weighted moving average density (see Section 7.4.1) from the last 10 years in each management region. In developing these trigger points, conservative quotas have been determined based on the average of the three lowest annual total harvests. This quota has been allocated to the commercial sector at the 10-year mean density level (to the nearest 5/km²) in each region and a sliding linear scale determined from this point.

2.1 Additional Management Responses

The Plan provides for additional management responses to ensure the sustainability of the harvest. Management aims to maintain possum densities at between 10 and 20/km². At densities of 20/km² or below, commercial permits in that region may be restricted to properties holding crop-protection permits. Should the density level in a management region fall below 10 possums/km², the WMB will conduct property inspections for all properties in that region on which commercial hunters wish to take brushtail possum. These inspections will determine whether that property has a legitimate crop protection need before a commercial permit to take possums on that property will be granted. The Commonwealth Department of the Environment will be notified should commercial hunting permits be issued within a region that has a possum density below 10/km².

Where the density is above the levels at which crop damage is unacceptable in a management region (>20/km²), the intention is to drive possum populations down¹. Where the density is below that desired (<10km²), the intention is to allow populations to recover. Where the density is at a sustainable long-term level (10-20/km²), the intention is to maintain populations in the prescribed range.

It should be noted that these trigger points assume that the annual crop protection take for specific possum population densities will be consistent with previous levels. Crop protection take is not managed under this Plan and is based on the crop-protection needs of the landholder. There is therefore a possibility, however unlikely, that future crop protection take may exceed previous levels. This would not however influence the setting of a commercial quota unless density levels observed during annual spotlight surveys indicated an associated unacceptable level of decline in possum density.

The annual commercial quotas outlined in Tables 1(a)-(d) will be implemented when population density indices fall within the corresponding trigger point range.

¹ The intention to drive possum populations down applies to situations where there is a need for crop protection from high possum densities. Where populations are at densities greater than 20/km² but are having no impact on primary production there is no intention and likely to be no need to decrease possum numbers.

Tables 1a, b, c & d: Commercial quotas to be allocated to each management region based on specific possum densities[#].

Densities listed refer to the 3-year exponentially weighted moving average density. Shaded rows show the likely annual quotas for each region based on long-term average densities.

a. Central Region 10-year average density = 64.3/km ²	
c. North East Region 10-year average density = 28.8/km ² Average 3-yrs lowest take = 76,040	
Density (possums/km ²)	Commercial quota
<10*	56,075
>100	59,467
95	58,262
90	57,057
85	55,852
80	54,647
75	53,442
70	52,237
65	51,032
60	49,827
55	48,622
50	47,417
45	46,212
40	45,007
35	43,802
30	42,597
25	41,392
20	40,187
15	38,982
10	37,777
5	36,572
0	35,367
<10*	Up to 5,603
20*	50,694
15*	38,021
<10*	Up to 5,348

b. South East Region 10-year average density = 39.2/km ²	
d. North West Region 10-year average density = 22.4/km ² Average 3-yrs lowest take = 10,231	
Density (possums/km ²)	Commercial quota
<10*	121,003
>100	108,903
95	107,698
90	106,493
85	105,288
80	104,083
75	102,878
70	101,673
65	100,468
60	99,263
55	98,058
50	96,853
45	95,648
40	94,443
35	93,238
30	92,033
25	90,828
20	89,623
15	88,418
10	87,213
5	86,008
0	84,803
<10*	Up to 4,093
20*	8,185
15*	6,179
>100	10,180
<10*	Up to 4,093
5	0
0	0

3 Current Population Trends and Quotas

As required by the plan, regional brushtail possum population trends were monitored through the annual program of statewide spotlight surveys. Referred to as the 2014-15 surveys, the most recent set of surveys were undertaken during the period November 2014 to February 2015.

Monitoring of trends in regional brushtail possum populations is undertaken through a system of standardised spotlight survey counts performed annually on mainland Tasmania. The standardised surveys are carried out in accordance with the method set out in the Tasmanian Spotlight Survey Manual (Hocking & Driessen 1992) and analysed in accordance with the methods described in section 7.6 of the plan. The results of these surveys provide the basis for determining the regional commercial quotas set in the document. Normally quotas will be set annually in June based on data from the previous surveys. Analysis of the current population trend for each region (with the exception of South West Region, due to the absence of commercial activity in this region) is provided below.

As stipulated in the plan, commercial quotas are to be determined annually for the maximum number of brushtail possums that may be commercially harvested in each region during the quota period. These quotas are based on the sliding scale provided for each management region (see Tables 1(a)-(d)). In this quota report the quota is being determined for the period 1 July 2015 to 30 June 2016.

The commercial quotas for the four management regions are based on the 3-year

exponentially weighted moving average (EWMA) density for each region and the

[#] Tabled quotas show a sliding density scale in 5/km² increments as a simple guide. Actual quotas are set using the exact density estimate.

* Commercial take may be restricted to properties covered by existing crop protection permits.

predetermined sliding scale of quotas for each region as stipulated in the plan (Tables 1(a)-(d)). The quotas determined by that process, for each region, are described below and summarised in Table 2.

Table 2. Regional commercial harvest quotas for brushtail possum for the period 1 July 2015 – 30 June 2016 based on mean 3-year EWMA density.

Region	Quota for July 2015-June '16
Central	32 409
South East	35 093
North East	69 197
North West	7 776
Total	144 475

3.1 Central Region

In the spotlight surveys undertaken in the Central Region in 2014-15, the observed density of brushtail possums decreased from 74/km² to 51.9/km², while the three-year Exponentially Weighted Moving Average (EWMA) decreased from 63.7/km² to 57.8/km². The three-year EWMA remains considerably higher than the trigger point (density = 20/km² or below) that initiates consideration of additional management controls (section 2.1).

Reference to Table 1(a) indicates the appropriate quota for this region at this density is **32 409** possums for the quota year 2015-16.

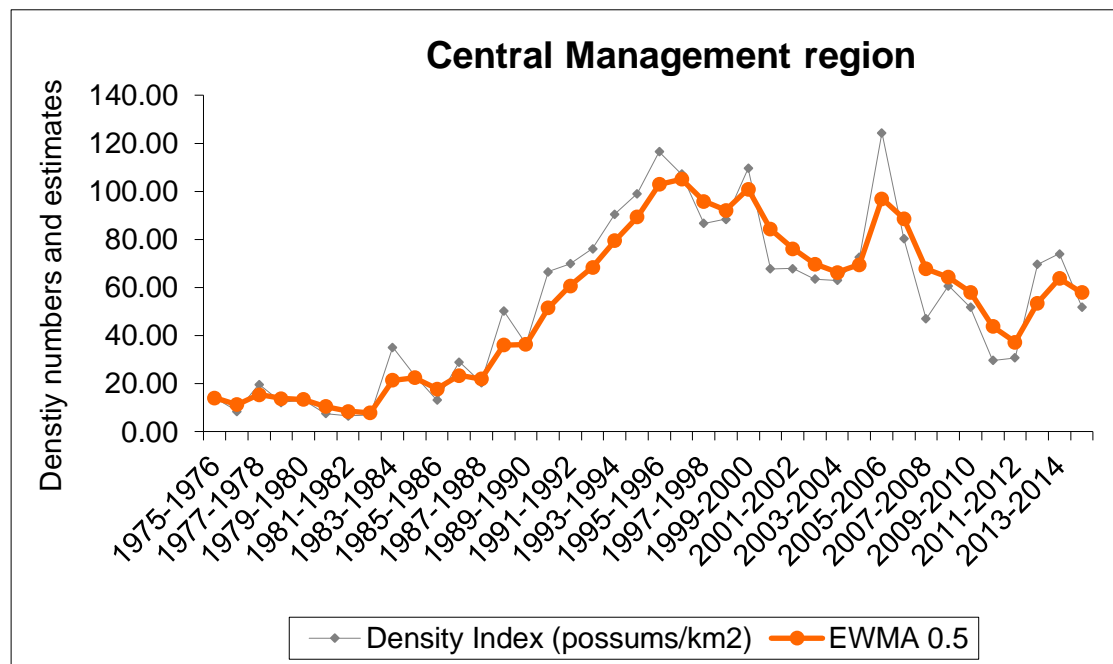


Figure 1 Central Region historical and current Density Index and three-year density trend

3.2 South East Region

In the South East Region the observed density of brushtail possums in 2014-15, decreased from 34.8/km² to 23.1/km², and the three-year Exponentially Weighted Moving Average (EWMA) decreased from 34.8/km² to 29.0/km². The EWMA remains above the trigger point (density = 20/km² or below) that initiates consideration of additional management controls (section 2.1).

Reference to Table I(b) indicates the appropriate quota for this region at this density is **35 093** possums for the quota year 2015-16.

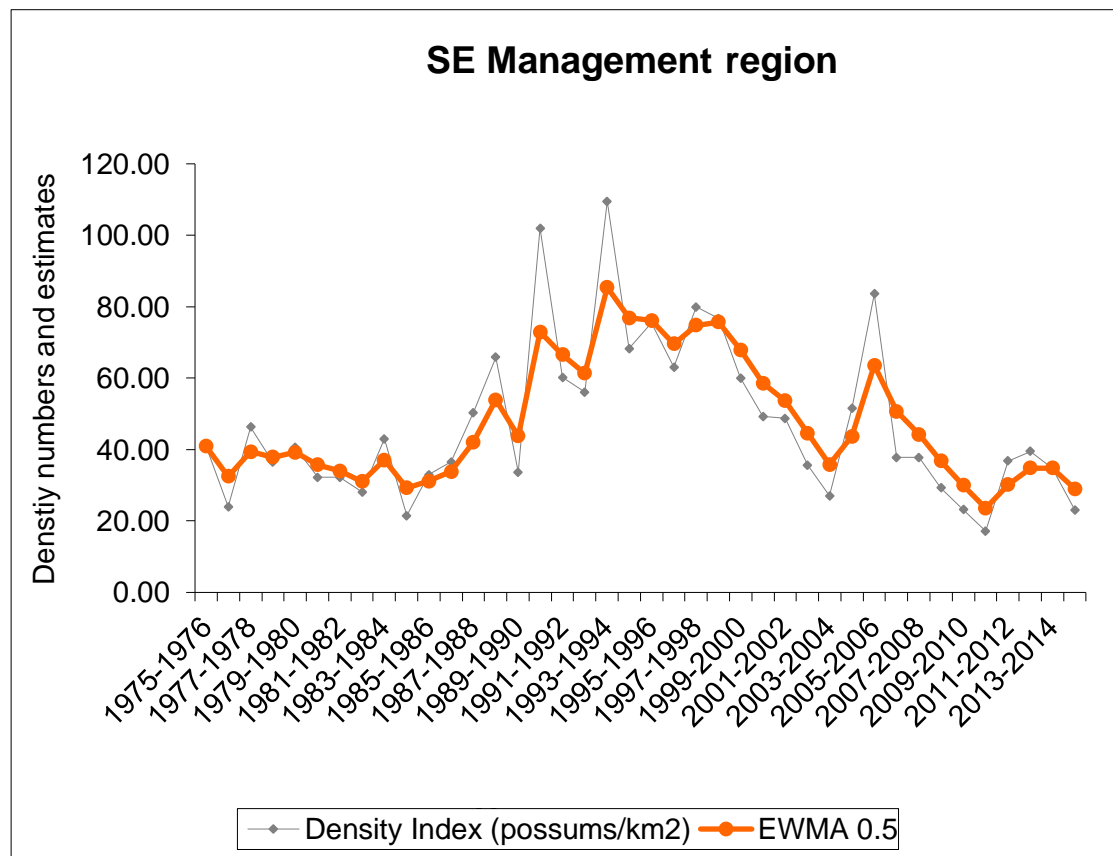


Figure 2 South East Region historical and current Density Index and three-year density trend

3.3 North East Region

In the North East Region the observed density of brushtail possums in 2014-15, has decreased from 30.1/km² to 27.8/km². The three-year Exponentially Weighted Moving Average (EWMA) increased from 26.8/km² to 27.3/km² (see Figure 3) and remains above the trigger point (density = 20/km² or below) that initiates consideration of additional management controls (section 2.1).

Reference to Table 1(c) indicates the appropriate quota for this region at this density is **69 197** possums for the quota year 2015-16.

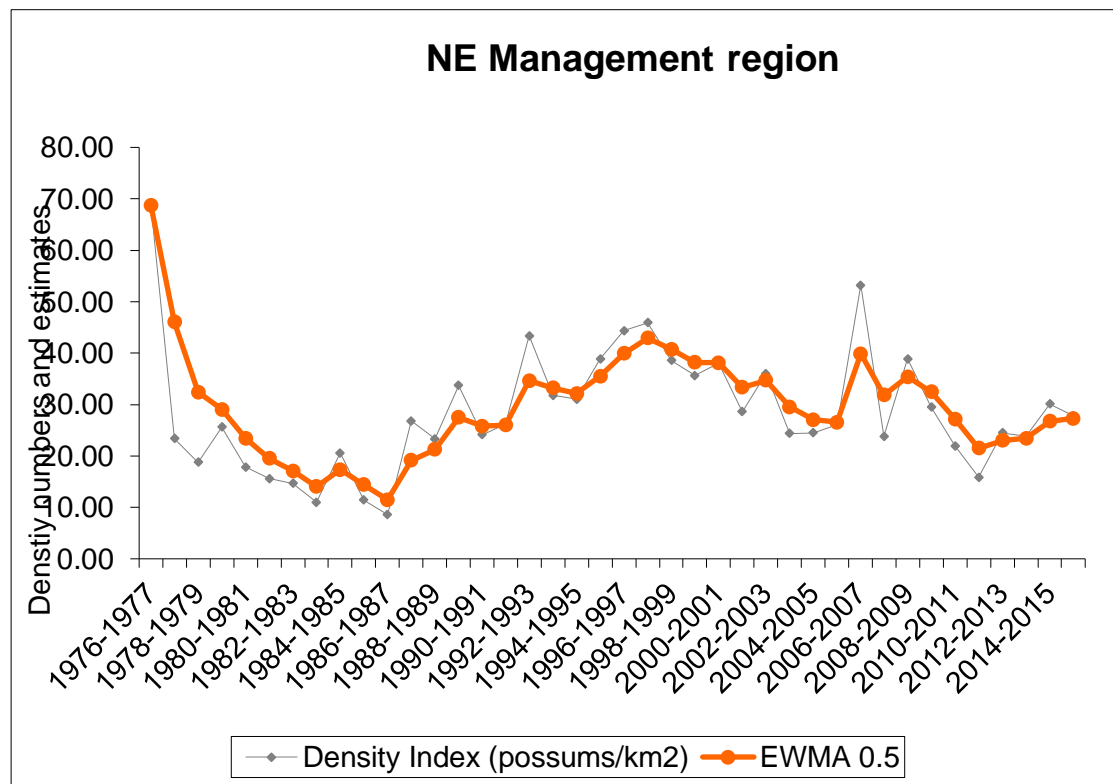


Figure 3 North East Region historical and current Density Index and three-year density trend

3.4 North West Region

In the North West Region the observed density of brushtail possums in 2014-15, decreased from 19.8/km² to 16.6/km², and the three-year Exponentially Weighted Moving Average (EWMA) also decreased from 21.4/km² to 19.0/km² (see Figure 4). The EWMA is now below the trigger point (density = 20/km² or below) that initiates consideration of additional management controls (section 2.1).

Reference to Table I (d) indicates the appropriate quota for this region at this density is **7 776** possums for the quota year 2015-16. In reality there has been very little commercial harvest from the North West region over the life of the plan, probably reflecting the lower density and patchy distribution of brushtail possum in this region. WMB will continue to monitor the harvest during the quota year to determine if any additional management actions become appropriate in this region.

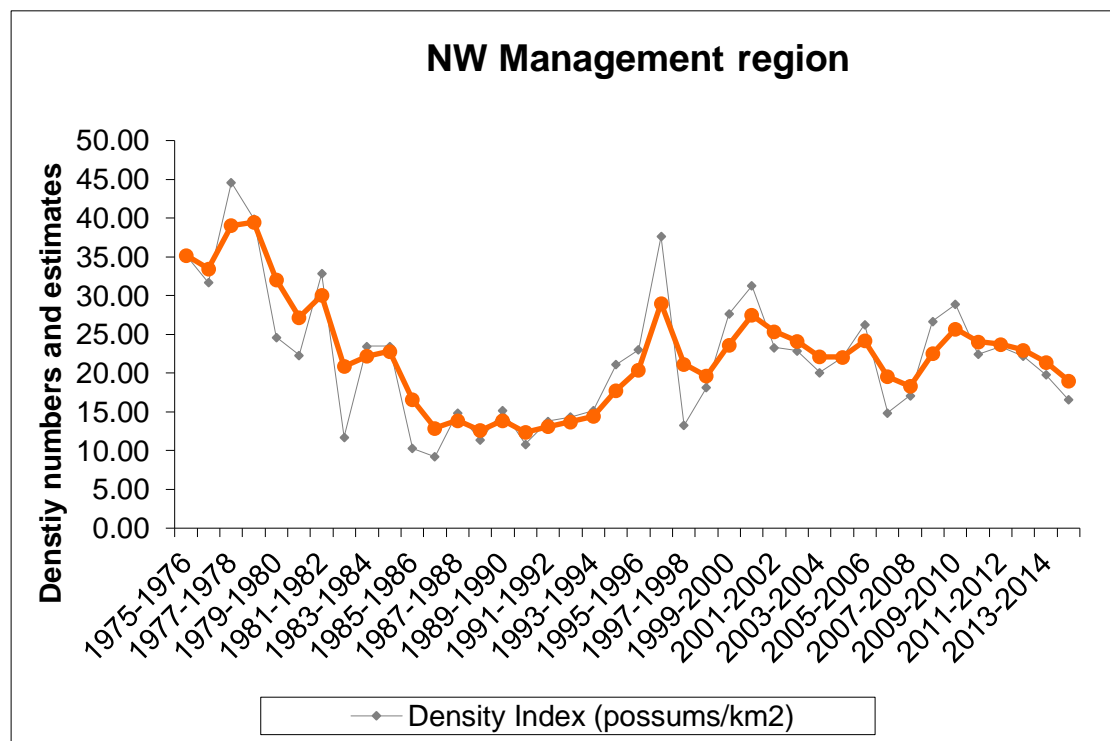


Figure 4 North West Region historical and current Density Index and three-year density trend